

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

GRAZING LAND MECHANICAL TREATMENT

(Acre)
Code 548

DEFINITION

Modifying physical soil and/or plant conditions with mechanical tools by treatments such as pitting, contour furrowing, and ripping or sub-soiling.

PURPOSES

This practice should be applied as part of a conservation management system to support one or more of the following purposes:

- Fracture compacted soil layers and improve soil permeability.
- Reduce water runoff and increase infiltration.
- Renovate and stimulate plant community for greater productivity and yield.
- Aerate the soil.
- Increase in soak and available moisture.
- Protect low-lying land or structures from siltation.

CONDITIONS WHERE PRACTICE APPLIES

(1) On native grazing land where perennial plants must be increased; (2) where soil and slope are suitable for each method and type of equipment used; (3) as emergency treatment after wildfire and other abnormal disturbances; (4) where grazing is managed to allow plants to respond to this treatment. Mechanical treatment may not be desirable on areas to be used for recreation.

CRITERIA

General Criteria Applicable for All the Purposes Stated Above

1. Areas to be treated shall be relatively weeded of noxious plants that are likely to increase because of surface disturbance.

2. Desirable forage species shall be of sufficient quantity and have a distribution pattern that allows the plants to take advantage of the improved moisture and to spread into disturbed or critical areas.
3. Mechanical treatment shall be limited to soils and slopes where surface disturbances will not result in unacceptable levels of erosion and sedimentation.
4. Mechanical treatment shall not interfere with traffic and the visual quality of the area.
5. Treated areas shall be deferred to allow desirable forage plants to increase.

CONSIDERATIONS

This practice uses mechanical means to shatter compacted soil layers to increase filtration. Evapotranspiration is expected to increase because of the stimulated plant growth. With increased vegetation production, the rate of runoff is slowed, further increasing infiltration.

The mechanical soil disturbance resulting from this practice may cause increased soil erosion and sediment transport until revegetation occurs. However, the practice is designed to increase vegetative production, which would slow runoff, increase soil infiltration, and filter sediment, water-soluble nutrients, and other sediment-attached sub-stances.

The chiseling should penetrate the fine textured layer to a sufficient depth that will improve water infiltration, root penetration and aeration. This practice is applicable to all capability units that have a restrictive layer within the effective root zone of the forage crop being grown. It is needed on pastureland but is especially important for native pasture within the semiarid region of the Caribbean Area.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

PLANS AND SPECIFICATIONS

1. Perform subsoiling with a chisel or similar equipment. Ground inversion is not permitted.
2. On most pastureland the minimum depth to chisel is 8 to 18 inches and the maximum spacing is 6 to 10 feet, depending on the slope.
3. Subsoiling must be done following the approximate true contour. The contour should have no grade.
4. The practice is limited to 60% slope depending on soil depth, texture, and available equipment. Generally, bulldozer, tractor and other similar equipment have limitations on land over 30% slope. The use of oxen and other ways may be used on land up to 60 % slope.

5. Practice should be done on or near the rainy season.
6. If grass cover is scarce, apply seed to chiseled area with desired species. Refer to Range Planting (Code 550) for details and specifications.

OPERATION AND MAINTENANCE

Operation and maintenance requirements are not applicable to this practice. If the desired effects of this practice are lost over time, the practice may need to be repeated.